CH2M HILL
125 South Wacker Drive
Suite 3000
Chicago, IL
60622
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April 07, 2008

345661.RO.01

Mr. Matthew J. Ohl
Work Assignment Manager (SR-6J)
U.S. Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3507

Subject: Remedial Action Oversight of the Attachment Z-1Remedy – Progress Report No. 2
Enviro-Chem Superfund Site, Zionsville, Indiana
WA No. 007-RXBF-0530, Contract No. EP-S5-06-01

Dear Mr. Ohl:

A copy of Progress Report No. 2 for the reporting period from March 02, 2008 to March 31, 2008 is enclosed. Electronic copies of the daily field notes may be found in Attachment A. Photographs for this period are in Attachment B. A copy of Addendum No. 1 to the HIS Constructor's Health and Safety Plan that details confined space entry, provided by Environ by e-mail on March 27, 2008, may be found in Attachment C. The revised C-11 and C-12 drawings to the Design Report, provided by Environ by e-mail on March 18, 2008 are in Attachment D, and the laboratory analytical results for the clay soil sample, provided by Environ by e-mail on March 31, 2008 are in Attachment E.

Please call me at (312) 873-9749 if you have any questions.

Sincerely,
CH2M HILL

Catherine Schripsema CMS

Catherine Schripsema

Enclosure
c: Pat Vogtman, PO/U.S. EPA, Region 5 (w/o enclosure)
Parveen Vij, CO/U.S. EPA, Region 5 (w/o enclosure)
Ike Johnson, PM/CH2M HILL, Milwaukee
Dan Plomb, DPM/CH2M HILL, Milwaukee
Regina Bayer, QAM/CH2M HILL, Milwaukee
Tim Harrison, SM/CH2M HILL, Cincinnati
Venky Venkatesh, Senior Reviewer/CH2M HILL, Cleveland
Al Erickson, RTL/CH2M HILL, Milwaukee
Cherie Wilson, AA/CH2M HILL, Milwaukee
Phil Smith, Senior Review/CH2M HILL, Milwaukee

Removal Action Oversight of the Attachment Z-1 Remedy Enviro-Chem Superfund Site Progress Report No. 2 (03/02/08 to 3/31/08)

PREPARED FOR: Matthew Ohl / U.S. Environmental Protection Agency

PREPARED BY: Jason Janssen / Environmental Design International

COPIES: Tim Harrison / CH2M HILL
Catherine Schripsema / CH2M HILL
Phil Smith/CH2M HILL

DATE: April 7, 2008

CH2M HILL Removal Action Oversight Observation

This is the second removal action oversight progress report submitted by CH2M HILL for field oversight activities performed by the Enviro-Chem Site Trustee's contractors for the Attachment Z-1 Remedy in Zionsville, Indiana. This progress report covers the period of March 2 through March 31, 2008. The field activities are managed by Environ, the Enviro-Chem Trust's (Trust's) engineer. Jason Janssen of Environmental Design International (EDI) provided field oversight during the period. EDI is a protégé subcontractor to CH2M HILL. Tim Harrison, CH2M HILL' site manager, was onsite on March 18 to observe construction progress.

HIS Constructors (HIS), the prime contractor for the Trust, and its subcontractors performed field activities during the reporting period. Jason Janssen/EDI performed field oversight during the period of March 4 though March 18, 2008. Field work was performed Monday through Friday. Mr. Janssen did not provide oversight from March 19 through March 31 because the contractor planned limited or no activities due to the foul weather conditions and problems with the trenches fracturing and collapsing. Field summary notes, in electronic format, are attached for the days that the EDI representative was onsite (see Attachment A). The notes have been transcribed from the original handwritten notes that are maintained onsite. Photographic logs for the period of March 4 through March 18 are in Attachment B.

Progress Made by the Trust's Contractor during this Reporting Period

The following items were performed during the reporting period.

- HIS Constructors performed the following activities:
  - Completed excavation, laying of pipe, and backfilling of soil vapor extraction (SVE) trench segment 3.
  - Completed excavation and pipe laying for SVE trench segment 2 for the entire length except for approximately 30 feet at the northern end of the segment 2 excavation where the trench collapsed.

  - Began excavation of SVE trench segment 4 before its collapse. Currently, trench segment 4 is backfilled with stone in order to keep the trench open, and the pipe has not been placed.
  - Cleaned up biopolymer slurry that seeped from SVE trench segment 3 on March 6 and 7.
- IWM (formerly Handex) performed the following activities:
  - Continued modifications to the waste water treatment plant (WWTP).
- USI survey contractors performed the following activities:
  - Marked the location of trench segments 6 and 7.

Problems Resolved by the Trust's Contractor

HIS, Environ, and the Trust decided that due to the collapse of trench segments 2 and 4, continued progress on those segments will continue by using a trench box method of excavation and construction. It was necessary for HIS to amend their Health and Safety Plan to include confined space entry. A copy of Addendum No. 1 to HIS' Health and Safety Plan is included as Attachment C.

Revisions to Drawings C-11 and C-12 of the Design Report were completed by HIS and Environ. The revisions to Drawing C-11 were done to correct an error noting incorrect pump types for temporary tanks 6 and 7. Revisions to Drawing C-12 contain dimensional changes to the PRGS vessel that were necessary after the thickness of the vessel walls were found to be too thin to provide proper self-support. Copies of the revised drawings are included as Attachment D.

Problem Areas Remaining

HIS and Environ are concerned with the risk of additional collapses in the remaining trench segments. HIS and Environ are proposing that the gravel overlaying the remaining trench segments be removed and clay material be brought onsite and then placed and compacted over the trench segments. The purpose would be to create a level ground elevation so that the trenches could be filled to a uniform depth with biopolymer slurry. HIS and Environ proposed utilizing a clay source near the Site and collected a single grab sample and submitted it for laboratory environmental analysis. The results of the sample are included as Attachment E.

Activities Planned by the Trust's Contractor

The following activities are expected to begin, or be completed, during the next reporting period.

- HIS Constructors expects to begin constructing SVE trench segments 5, 6, and 7, and possibly resuming segments 2 and 4.
- IWM plans to continue modifications to the WWTP.
- Dale Hubbard Electric plans to continue electrical work related to the SVE and dewatering system.

Schedule Status

Based on the current schedule dated January 22 from HIS Constructors, it appears that progress is on schedule as of the end of the reporting period. CH2M HILL is working to obtain a revised schedule from Environ.

Attachment A

CH2M HILL Daily Field Notes for the Period of March 2 though March 31, 2008

CH2MHILL

DAILY INSPECTION DIARY

PROJECT NO. 345661

(1)	DAY:	Tuesday	DATE:	3/4/08	WORK PERIOD:	1100	a.m. p.m.	TO 1530	a.m. p.m.	REPORT NO.	013

	WEATHER:	Overcast	TEMP. MAX	32	°F:	MIN	29	°F:	PRECIPITATION:	Light rain and sleet

(2) **On Site:**

Jason Janssen / Environmental Design International

7 HIS Contractors

1 GSI Contractor

(3)

General Information	
	Description
	During work yesterday, March 3, HIS constructed a berm at the southern end of the trench segment 3 spoils pile. The berm was constructed to prevent the biopolymer slurry removed with the spoils from running down grade on the site and to direct the biopolymer slurry back into trench segment 3.

(4) **WORK ACCOMPLISHED TODAY:**

- Continued excavation of trench segment 3, with all but the northern most 30 feet dug to design depth.

(6) Jason Janssen — 3-4-08

SIGNATURE/TITLE — DATE

CONTINUED FROM ITEM:

CH2MHILL

DAILY INSPECTION DIARY

PROJECT NO. 345661

(1)	DAY:	Wednesday	DATE:	3/5/08	WORK PERIOD:	0730	a.m. p.m.	TO 1730	a.m. p.m.	REPORT NO.	014

	WEATHER:	Partly Cloudy	TEMP. MAX	36	°F:	MIN	30	°F:	PRECIPITATION:	None

(2)	**On Site:**
	Jason Janssen / Environmental Design International
	7 HIS Contractors
	1 GSI Contractor
	1 IWM Contractor

(3)

	General Information
	Description

(4) **WORK ACCOMPLISHED TODAY:**

– HIS conducted a health and safety meeting
– HIS completed excavation of trench segment 3
– IWM continued to make modifications to the waste water treatment plant
– GSI and HIS mixed biopolymer slurry
– HIS assembled SVE and conveyance piping for Trench Segment 3

(6) Jason Janssen — 3-5-08

SIGNATURE/TITLE — DATE

CONTINUED FROM ITEM:

CH2MHILL

DAILY INSPECTION DIARY

PROJECT NO. 345661

(1)	DAY:	Thursday	DATE:	3/6/08	WORK PERIOD:	0730	a.m. p.m.	TO 1600	a.m. p.m.	REPORT NO.	015

	WEATHER:	Overcast	TEMP. MAX	40	°F:	MIN	30	°F:	PRECIPITATION:	None

(2)	**On Site:**
	Jason Janssen / Environmental Design International
	7 HIS Contractors
	1 GSI Contractor
	Stan Popelar / Environ

(3)

	General Information
	Description
	In the morning, HIS noticed biopolymer slurry seeping through the compacted gravel of the access road / work platform located at the northern most 20 feet of trench segment 3. The biopolymer slurry was collecting between the toe of the gravel access road and the silt fence protecting Unnamed Ditch. HIS immediately began collecting the biopolymer slurry and placing it back into trench segment 3. To stop the seepage of slurry, HIS began excavation of trench segment 2 to allow the biopolymer slurry from segment 3 to enter, lowering the overall level of slurry in the trench. To protect against any further slurry from reaching the silt fence, HIS dug a series of approximately 1-foot deep holes in the area between the silt fence and the gravel access road to collect any biopolymer slurry. HIS also spread powdered bentonite clay at the toe of the silt fence with the idea that any slurry encountering the bentonite would cause it to expand and seal itself against the silt fence. In addition, HIS installed a new silt fence along trench segment 2 just west of the existing silt fence.

(4) **WORK ACCOMPLISHED TODAY:**

HIS completed the following work for the day:

- Conducted a health and safety meeting.
- Began assembling SVE and conveyance piping for trench segment 2.
- Submerged and placed SVE and conveyance piping for trench segment 3, and began backfilling.
- Began cleanup of the biopolymer slurry seeping from trench segment 3 towards Unnamed Ditch.
- Began excavation of trench segment 2.
- Installed a new silt fence along trench segment 2 just west of the existing silt fence.

(6) Jason Janssen — 3-6-08

SIGNATURE/TITLE — DATE

CONTINUED FROM ITEM:

CH2MHILL

DAILY INSPECTION DIARY

PROJECT NO. 345661

(1)	DAY:	Friday	DATE:	3/7/08	WORK PERIOD:	0730	a.m. p.m.	TO 1730	a.m. p.m.	REPORT NO.	016

	WEATHER:	Overcast	TEMP. MAX	27	°F:	MIN	27	°F:	PRECIPITATION:	Light Snow

(2)	**On Site:**
	Jason Janssen / Environmental Design International
	6 HIS Contractors
	1 GSI Contractor
	Stan Popelar / Environ

(3)

	General Information
	Description
	In the morning, HIS observed biopolymer slurry still was seeping from the compacted gravel of the access road in same area at trench segment 3. The slurry accumulated between the silt fence along Unnamed Ditch and the toe of the gravel access road. HIS cleaned up the biopolymer slurry that had seeped and pumped slurry out of the trench into a fraction tank onsite. HIS dropped the biopolymer slurry to approximately 1.5 feet below the top of the native soil elevation in the trench and completed backfilling trench segment 3 to prevent collapse of the trench. HIS believes the lower biopolymer slurry elevation will prevent the slurry from entering the compacted gravel of the access road above the native soil.

(4) **WORK ACCOMPLISHED TODAY:**

- HIS conducted a health and safety meeting.
- HIS continued cleanup of the biopolymer slurry seeping from trench segment 3 towards Unnamed Ditch.
- HIS completed backfilling trench segment 3.

(6) Jason Janssen — SIGNATURE/TITLE

3-7-08 — DATE

CONTINUED FROM ITEM:

CH2MHILL

DAILY INSPECTION DIARY

PROJECT NO. 345661

(1)	DAY: Monday	DATE: 3/10/08	WORK PERIOD: 1115 a.m. p.m.	TO 1615 a.m. p.m.	REPORT NO. 017

	WEATHER: Partly Cloudy	TEMP. MAX 47 °F:	MIN 35 °F:	PRECIPITATION: None

(2)	**On Site:**
	Jason Janssen / Environmental Design International
	7 HIS Contractors
	1 GSI Contractor
	Stan Popelar / Environ
	Felix Moran / Environ

(3)

	General Information
	Description
	Felix Moran is replacing Stan Popelar as Environ's field representative.

(4) ***WORK ACCOMPLISHED TODAY:***

HIS completed the following activities:

- Continued excavation of trench segment 2 with all but the northernmost 30 feet dug to design depth.
- Began assembling the ¾-inch pipe that will run from the dewatering wells to the temporary tanks.
- Assembled the SVE and conveyance piping for trench segment 2.

(6) Jason Janssen — SIGNATURE/TITLE

3-10-08 — DATE

CONTINUED FROM ITEM:

CH2MHILL

DAILY INSPECTION DIARY

PROJECT NO. 345661

(1)	DAY: Tuesday	DATE: 3/11/08	WORK PERIOD: 0730	a.m. p.m.	TO 1730	a.m. p.m.	REPORT NO.	018

	WEATHER:	Clear	TEMP. MAX	45	°F:	MIN	28	°F:	PRECIPITATION:	None

(2)	**On Site:**
	Jason Janssen / Environmental Design International
	7 HIS Contractors
	1 GSI Contractor
	Felix Moran / Environ
	Ron Hutchens / Environ

(3)

	General Information
	Description

(4) **WORK ACCOMPLISHED TODAY:**

- HIS conducted a health and safety meeting.
- HIS completed excavation of trench segment 2 and placed the SVE and conveyance piping.
- GSI batched mixed biopolymer slurry as needed for trench segment 2.

(6) Jason Janssen — 3-11-08

SIGNATURE/TITLE — DATE

CONTINUED FROM ITEM:

CH2MHILL

DAILY INSPECTION DIARY

PROJECT NO. 345661

(1)	DAY:	Wednesday	DATE:	3/12/08	WORK PERIOD:	0730	a.m. p.m.	TO 1630	a.m. p.m.	REPORT NO.	019

	WEATHER:	Clear	TEMP. MAX	48	°F:	MIN	30	°F:	PRECIPITATION:	None

(2)	**On Site:**
	Jason Janssen / Environmental Design International
	7 HIS Contractors
	1 GSI Contractor
	Felix Moran / Environ
	2 USI Surveyors

(3)

	General Information
	Description
	HIS observed fracturing of the soils along trench segment 2 at the northern end along the west wall. HIS made an effort to stabilize the trench by backfilling in the area with stone borrowed from the top of trench segment 1. The amount of stone needed exceeded what could be safely removed from trench segment 1 and HIS began efforts to quickly backfill trench segment 2 from the south. During this time, an approximate 20 foot by 8 inch portion of the segment 2 western trench wall, at the northern end of the segment, caved off into the excavation. Portions of the wall that caved off landed on top of the SVE and conveyance piping that was suspended in the trench, altering the elevations of the piping. HIS raised the level of the biopolymer slurry by backfilling the trench in order to prevent additional cave-ins, and there was no evidence of seepage with the higher levels of biopolymer slurry. At the end of the day, the slurry level was pumped down to avoid any potential seepage issues overnight. HIS plans on pumping the slurry level down further tomorrow to visually inspect the SVE and conveyance piping and remove the sloughed soils from around the piping with a vacuum truck.

(4) **WORK ACCOMPLISHED TODAY:**

HIS completed the following:

- Conducted a health and safety meeting
- Began backfilling trench segment 2 completing all but the northern most 40 feet.
- Began assembling the SVE pipe for trench segment 7.

- USI surveyed and staked out the locations for trench segment 6 and 7

(6) Jason Janssen — SIGNATURE/TITLE

3-12-08 — DATE

CONTINUED FROM ITEM:

CH2MHILL

DAILY INSPECTION DIARY

PROJECT NO. 345661

(1)	DAY: Thursday	DATE: 3/13/08	WORK PERIOD: 0730 a.m. p.m.	TO 1630 a.m. p.m.	REPORT NO. 020

	WEATHER: Clear	TEMP. MAX 60 °F:	MIN 40 °F:	PRECIPITATION: None

(2)	**On Site:**
	Jason Janssen / Environmental Design International
	11 HIS Contractors
	1 GSI Contractor
	Felix Moran / Environ

(3)

	General Information
	Description
	This morning, HIS and GSI began pumping down the biopolymer slurry levels in trench segment 2 to inspect the SVE and conveyance piping in the area of the collapsed wall, and prepared to use a vacuum truck to remove any soils that would be on the pipes. An additional portion of the western wall in trench segment 2 became unstable and caved into the trench in the morning. HIS developed a plan of action to prevent the cave-ins: As much soil that had caved in would be removed as safely as possible from the top of the piping. A trench box(s) would be acquired and placed to secure the sidewalls from further collapse. A possible mix of mechanical digging and vacuuming would be used to expose the piping within the trench box to allow for restoration of the trench, proper grading of the piping, and backfilling. Use of the trench box may require that the piping be cut and restored with welding in the trench, and would require manned entry and a modification to HIS' Health and Safety Plan.
	At the end of the day, HIS moved the tracked excavator that was at the northern end of trench segment 2 over the spoils pile onto the shoulder of the RCRA cap and down the length of the cap to the start of segment 4. The tracks of the excavator were manually cleaned after the excavator crossed the spoils pile. The move damaged a portion of the vegetative cover, but no further harm to the RCRA cover was observed.
	HIS indicated the locations of trench segment 6 and 7 may need to be adjusted due to the laid out locations being near the monitoring wells and the still buried third site piping that runs along the South Ditch.

(4) **WORK ACCOMPLISHED TODAY:**

HIS completed the following:

- Conducted a health and safety meeting.
- Continued backfilling the remaining un-collapsed portions of trench segment 2.
- Removed as much soil as possible from the collapsed area of trench segment 2 without the use of the trench box.
- Received and placed a trench box into the collapsed area of trench segment 2.

(6) Jason Janssen — SIGNATURE/TITLE

3-13-08 — DATE

CONTINUED FROM ITEM:

CH2MHILL

DAILY INSPECTION DIARY

PROJECT NO. 345661

(1)	DAY: Friday	DATE: 3/14/08	WORK PERIOD: 0730 a.m. p.m.	TO 1600 a.m. p.m.	REPORT NO. 021

	WEATHER: Cloudy	TEMP. MAX 52 °F:	MIN 40 °F:	PRECIPITATION: None

(2)	**On Site:**
	Jason Janssen / Environmental Design International
	6 HIS Contractors
	1 GSI Contractor
	Felix Moran / Environ
	Norman Bernstein / Trustee

(3)

	General Information
	Description
	The centerline for trench segment 4 was adjusted. The northern end of trench segment 4 was moved 3 feet west of the location noted in the design report and the southern end of segment 4 was moved approximately 8 feet west of the location noted in the design report. The shift was due to concerns that the excavations for the PRGS manholes would be too close to the TBCW, and that PRGS manhole 4, at the southern end of segment 4, would be too close to Piezometers PT-3 and PT-4.

(4) **WORK ACCOMPLISHED TODAY:**

- HIS conducted a health and safety meeting.
- HIS began excavation of trench segment 4, digging all but the southern 50 feet to design depth.

(6) Jason Janssen — SIGNATURE/TITLE

3-14-08 — DATE

CONTINUED FROM ITEM:

CH2MHILL

DAILY INSPECTION DIARY

PROJECT NO. 345661

(1)	DAY: Monday	DATE: 3/17/08	WORK PERIOD: 1115	a.m. p.m.	TO 1615	a.m. p.m.	REPORT NO.	022

	WEATHER: Cloudy	TEMP. MAX 40	°F:	MIN 33	°F:	PRECIPITATION: None

(2)	**On Site:**
	Jason Janssen / Environmental Design International
	6 HIS Contractors
	1 GSI Contractor
	Felix Moran / Environ

(3)

	General Information
	Description
	Over the weekend, approximately 70 feet of the 90 feet excavated, of trench segment 2's western wall caved in. The western wall of trench segment 2 shows additional fractures in the soil suggesting further collapse could be possible. To prevent further collapse and create a safe work area, HIS backfilled the incomplete trench segment 2 with stone.
	In order to continue excavation without further collapse, HIS and Environ propose that the gravel overlying the remaining trench segments be removed and clay material be brought onsite, graded to a constant elevation, and compacted over the trench segments. After compacting the clay material, the remaining trench segments would be excavated in the same manner as the previous trench segments. HIS and Environ would do this in order to create a constant ground elevation and eliminate elevation changes across the length of the trench segments. (The elevation of the south end of the trench segments is lower than the northern end of the trench segments.) This change in elevation makes it impossible to fully fill the northern end of the trench segments to a proper level without having the biopolymer slurry overflow at the southern end, and therefore, the northern end of the trench segments has unsupported soils and gravel.

(4) **WORK ACCOMPLISHED TODAY:**

- HIS backfilled the incomplete trench segment 2.
- HIS prepared the site for 4 to 5 inches of rain that is forecasted from Monday night through Wednesday.

(6) Jason Janssen — 3-17-08

SIGNATURE/TITLE — DATE

CONTINUED FROM ITEM:

CH2MHILL

DAILY INSPECTION DIARY

PROJECT NO. 345661

(1)	DAY:	Tuesday	DATE:	3/18/08	WORK PERIOD:	0730	a.m. p.m.	TO 1400	a.m. p.m.	REPORT NO.	023

	WEATHER:	Cloudy	TEMP. MAX	45	°F:	MIN	37	°F:	PRECIPITATION:	Occasional Light Rain

(2)	**On Site:**
	Jason Janssen / Environmental Design International
	5 HIS Contractors
	1 GSI Contractor
	Tim Harrison / CH2M HILL

(3)

General Information	
	Description

(4) **WORK ACCOMPLISHED TODAY:**

- HIS and GSI setup a recirculation pump for the biopolymer slurry removed from trench segment 2 and stored it in a fraction tank.
- HIS performed maintenance on the silt fences after last night's rain event and in preparation for forecasted additional rains of 2 to 4 inches.

(6) Jason Janssen — SIGNATURE/TITLE

3-18-08 — DATE

Attachment B

CH2M HILL Weekly Photo Logs for the Period of March 2 though March 31, 2008

PHOTO 1
Facing southeast, a view of trench segment 3 and the spoils being placed on the liner nearby.
March 4, 2008

PHOTO 2
Looking at the southern end of trench segment 3 and the berm constructed by HIS in order to direct excess slurry, from the spoils pile, back into trench segment 3.
March 4, 2008

PHOTO 3
A view of the excess biopolymer slurry flowing back into trench segment 3 from the spoils pile.
March 4, 2008

PHOTO 4
Facing north, looking at segment 3 at the end of day.
March 4, 2008

PHOTO 5
Looking north at HIS assembling the SVE and conveyance piping.
March 5, 2008

PHOTO 6
Facing south looking at HIS collecting the biopolymer slurry that seeped through the compacted gravel of the access road.
March 6, 2008

PHOTO 7
Facing north looking at the biopolymer slurry that seeped through the compacted gravel.
March 6, 2008

PHOTO 8
Facing northeast, a view of HIS preparing to submerge and place the SVE and conveyance piping in trench segment 3.
March 6, 2008

PHOTO 9
Facing northeast, a view of HIS placing the submerged SVE and conveyance piping in trench segment 3.
March 6, 2008

PHOTO 10
A view of HIS backfilling the southern end of trench segment 3.
March 6, 2008

PHOTO 11
Facing east, a view of HIS beginning excavation of trench segment 2.
March 6, 2008

PHOTO 12
A view of the holes dug by HIS to collect additional biopolymer slurry that had seeped through the gravel.
March 6, 2008

PHOTO 13
Facing south, a view of the new (black) silt fence placed by HIS along trench segment 2.
March 6, 2008

PHOTO 14
A view of trench segment 2 with the biopolymer slurry lowered to a level below the compacted gravel of the access road.
March 7, 2008

PHOTO 15
Facing north, a view of trench segment 3 backfilled.
March 10, 2008

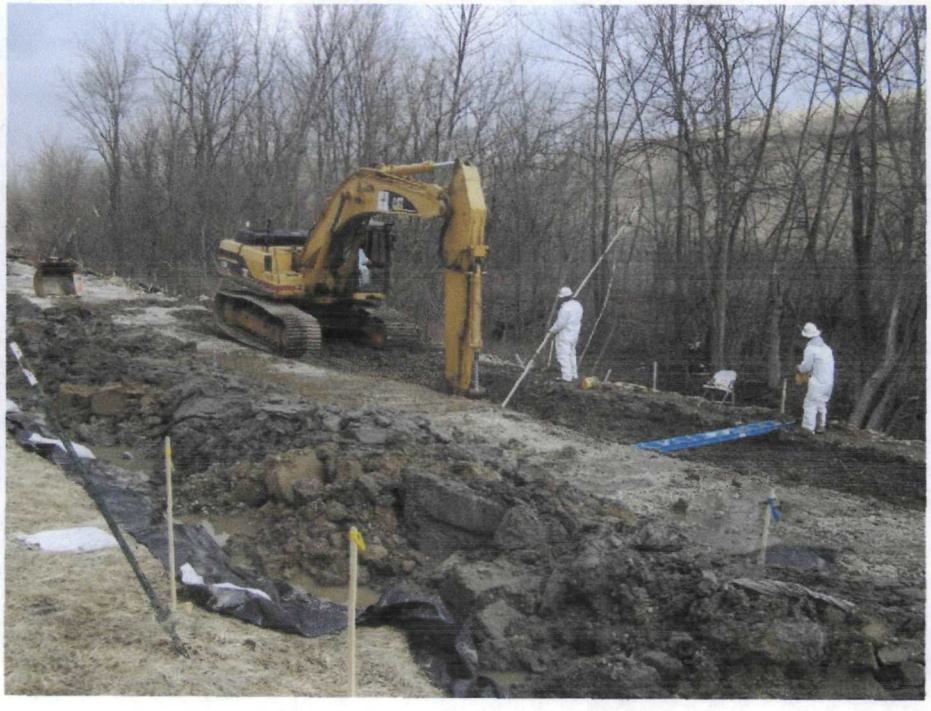

PHOTO 16
Facing northeast, a view of HIS digging trench segment 2.
March 10, 2008

PHOTO 17
Facing north, a view of trench segment 2 at the end of the day.
March 10, 2008

PHOTO 18
Facing southeast, a view of HIS preparing to place the SVE and conveyance piping into trench segment 2.
March 11, 2008

PHOTO 19
Facing southeast, a view of the SVE and conveyance piping being submerged into trench segment 2 by HIS.
March 11, 2008

PHOTO 20
Facing north, a view of trench segment 2 with the SVE and conveyance piping submerged.
March 11, 2008

PHOTO 21
Facing north, a view of the fracturing that occurred along trench segment 2 before the first cave-in.
March 12, 2008

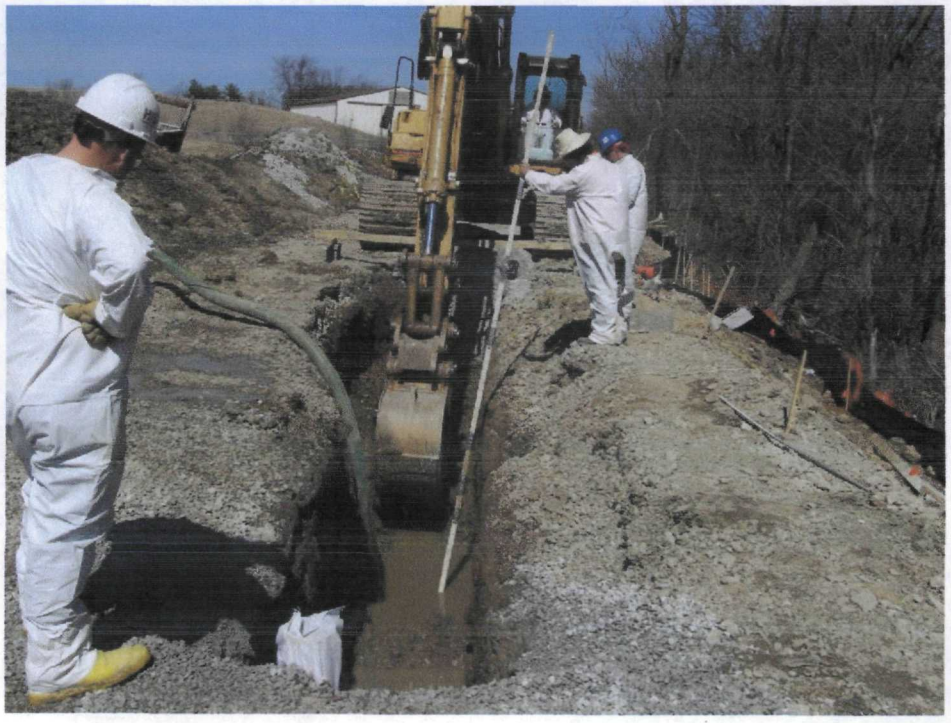

PHOTO 22
Facing north, a view of HIS removing the caved-in soils in trench segment 2.
March 13, 2008

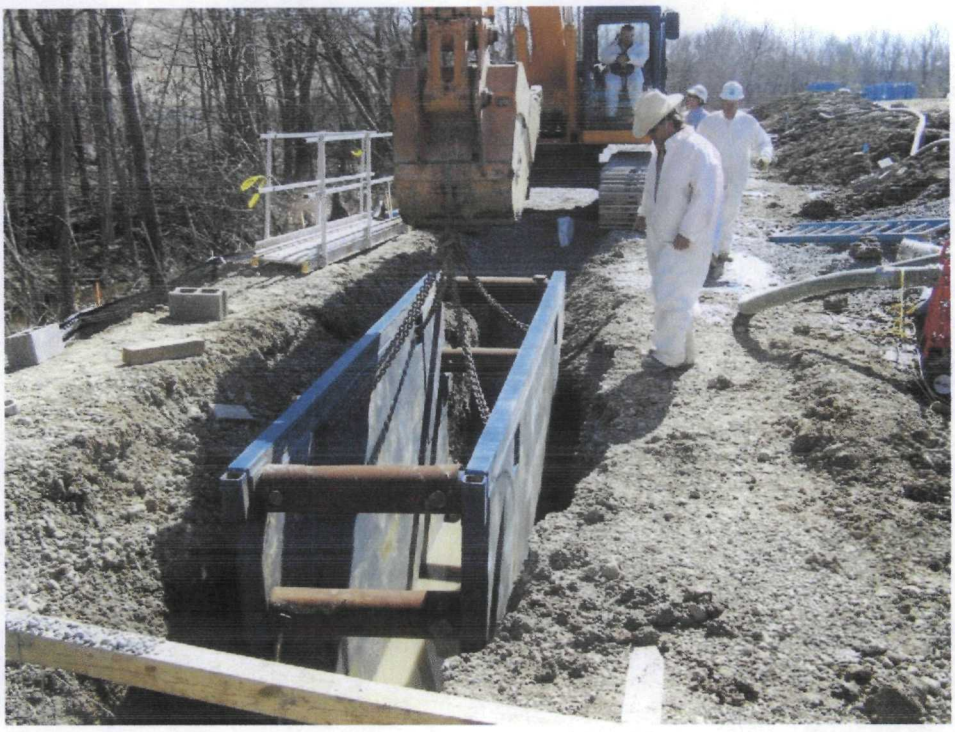

PHOTO 23
Facing south, a view of HIS placing a trench box into trench segment 2.
March 13, 2008

PHOTO 24
Facing southeast, a view of the damaged vegetative cover of the RCRA cap.
March 13, 2008

PHOTO 25
Facing south, a view of the adjusted centerline of trench segment 4 marked out as a dashed orange line.
March 14, 2008

PHOTO 26
Looking south at trench segment 4 that caved in.
March 17, 2008

PHOTO 27
Looking south at HIS backfilling trench segment 4.
March 17, 2008

PHOTO 28
Looking south at the backfilled trench segment 4.
March 17, 2008

Attachment C

Addendum No. 1 to HIS' Health and Safety Plan

Enviro-Chem HASP Amendment 1
Confined Space Entry Plan
March 27, 2008

Section IV. Add 4.1 to HASP

Application: This amendment will be used in addition to the previously prepared and submitted Health and Safety Plan for the Enviro-Chem remedial site. This amendment is only to be applied to entering the trench segments that have collapsed and for entry during manhole installation. Entry will only be permitted when all following conditions are met:

- Trench side walls are secured with an appropriate trench box. This applies to collapsed trench segments and manhole installation.
- Air monitoring is completed before entry utilizing the same guidance outlined in the site specific Health and Safety Plan (Section 9.2.3).
- Once a non hazardous atmosphere is established (Oxygen between 19.5% and 23.5% and LEL below 10%), entry will be allowed with full dermal protection and the use of positive pressure supplied air respirators with 5 minute escape pack, and continuous air monitoring equipment.
- Upon entry, continuous air monitoring will be conducted within the confined space to ensure no change in conditions. If at any time during entry conditions become hazardous, an immediate evacuation of the confined space will be ordered.

The Confined Space Entry Procedure (Section 1 Tab 4 Revision date 3-24-08) contained in the HIS Health and Safety Manual shall be followed, including the completion of a safe work permit (also attached). All personnel with the potential to enter a confined space, either as an Entrant or as an Attendant, in the case of a rescue situation, will be equipped with full dermal protection along with positive pressure supplied air respirators with 5 minute escape pack. Entrants will also be equipped with continuous air monitors that will be required while in a confined space.

HIS Constructors, LLC will allow up to two Entrants to work in the trench at a time. There will be one Attendant for each person in the trench. The Attendant will not leave the area until the Entrant has safely exited the trench. Only persons trained in confined space entry and have practiced confined space rescue within the past year will be assigned to the rescue team (Confined Space Certification included as Attachment 1). Once plans are approved, HIS personnel training documents must be stored onsite during operations of Confine Space Entry.

A hazardous environment, or environment designated as Immediately Dangerous to Life and Health (IDLH) exists if monitoring prior to entry, reveals a Lower Explosive Limit (LEL) of greater than 10%, an oxygen deficient environment (less than 19.5%), or an oxygen enriched environment (greater than 23.5%). The continuous air monitors used by Entrants have

alarm limits that will alert the Entrants before the confined space becomes a hazardous environment, to allow sufficient time for evacuation. In the event that a hazardous atmosphere is encountered at any point during confined space activities, the following steps will be taken:

- Immediately evacuate to a safe location.
- If possible, identify all possible source(s) creating the hazardous environment and remove them from the area.
- Install engineering controls to eliminate the hazardous environment. This includes, but is not limited to, air displacement equipment and chemical vapor and gas suppressants.

Potential situations that a hazardous environment would arise would be an oxygen deficient environment caused by equipment exhaust displacing air in the confined space. LEL levels also have the potential to create a hazardous environment by accumulation of volatile organic compounds associated with site contamination along with methane migration from the adjacent landfill. Both situations could create an LEL greater than 10% if it fills the confined space.

Air monitoring will be conducted outside the confined space, within the exclusion zone, as outlined in the Health and Safety Plan.

Justification: This amendment is based on utilizing adequate respiratory protection for the Entrant through the use of positive pressure supplied air respirators with 5 minute escape pack. Air purifying respirators are not being considered due to the time involved and the potential for changing concentrations and variety of hazardous constituents that could be present, making air purifying cartridge selection difficult if not impossible.

SUBJECT: CONFINED SPACE ENTRY Enviro Chem Augmented SVE Trench Installation	NUMBER 1-12
	Page 1 of 7
	DATE PUBLISHED 3-27-2008

1.0 POLICY

No employee or contractor is to enter a permit-required confined space until atmospheric and physical conditions testing have been conducted and a confined space entry permit has been completed. Confined space permits (See Safe Work Permit) are valid for a single work shift only.

2.0 PURPOSE

This procedure provides personnel with requirements for working safely in confined spaces.

3.0 DEFINITIONS

3.1 Confined Space

Any space large enough and configured that an employee can bodily enter and perform assigned work. Any space with limited or restricted means of egress and is not designed for continuous employee occupancy. Examples of confined spaces include, but are not limited to: tanks, vessels, bins, boilers, ductwork, skewers, underground utility vaults, manholes, tunnels, and pipelines.

3.2 Permit-Required Confined Space

A confined space that has one or more of the following characteristics:

3.2.1 Contains or has a potential to contain a hazardous atmosphere;

3.2.2 Contains a material that has the potential to engulf or entrap;

3.2.3 Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section;

3.2.4 Contains any other recognized serious safety or health hazard.

3.3 Oxygen Deficiency

Atmospheres which contain less than 19.5 percent oxygen.

3.4 Flammable Atmosphere

Atmospheres in excess of 10 percent of the lower flammable limit of the material in question. These are often toxic as well as flammable.

3.5 Toxic Atmosphere

Atmospheres having concentrations of airborne chemicals in excess of permissible exposure limits as defined by federal or state regulations or Threshold Limit Values (TLVs).

4.0 PROCEDURE

4.1 A confined space entry permit (See Safe Work Permit) containing the applicable elements of this section will be written and approved prior to any entry into a confined space.

4.2 Entry may only occur when the confined space entrant and other entry participants are adequately protected from any of the hazards that might be present.

4.3 The air in the confined space is to be tested for oxygen deficiency, oxygen enrichment, flammable atmosphere, and any toxic contaminants likely to be present. All tests of the atmosphere are to be made by trained, competent personnel using calibrated equipment. The confined space shall be constantly monitored while work is taking place. Only authorized employees will be allowed to enter the confined space.

4.4 Electrical equipment and lighting are to be explosion proof when used in confined spaces subject to flammable or explosive gases, vapors, or dusts. Extreme care must be taken in dusty atmospheres because there may be no indication of problems on atmospheric test equipment, yet a hazard exists. Power tools should be pneumatic when possible.

4.5 All work will stop and the confined space evacuated if any indication of ill effect are noted, such as dizziness, irritation, or excessive odors.

4.6 Excavation will be secured with an appropriate trench box. Entry will not be permitted until trench box has been secured.

4.7 Rescue equipment must be at the project site prior to commencing work. Rescue equipment will include additional positive pressure supplied air respirators with 5 minute escape pack. No one should enter a confined space until adequate safety equipment is present to remove an unconscious person.

4.8 A ladder is required in all confined spaces deeper than four feet. At one end of the trench a ladder shall be secured and not removed until all employees have exited the space. The other end will maintain a two to one slope.

4.9 The project supervisor is responsible for evaluating general safety hazards including permits, locking out of equipment, adequate lighting, tools, etc. and is responsible for assuring the confined space entry permit is completed.

4.10 Confined space entry permits (See Safe Work Permit) will be maintained in the project file.

4.11 A copy of the confined space entry permit (See Safe Work Permit) follows this procedure.

5.0 DUTIES OF AUTHORIZED ENTRANTS

5.1 Each authorized entrant shall use full dermal protection and positive pressure supplied air respirators with 5 minute escape pack, along with all other appropriate protective clothing required by the job task and the site specific Health and Safety Plan.

5.2 Each entrant will have an assigned attendant. Each attendant will be equipped with the same equipment as entrant and will not lose visible contact with entrant while work is being completed within a confined space.

5.3 If an injured entrant is exposed to a substance for which a Material Safety Data Sheet (MSDS) or other similar written information is required to be kept at the worksite, that MSDS or written information shall be made available to the medical facility treating the exposed entrant.

SUBJECT: CONFINED SPACE ENTRY Enviro Chem Augmented SVE Trench Installation	NUMBER 1-12
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6.0 DUTIES OF ATTENDANTS

6.1 HIS shall ensure that each attendant:

6.1.1 Knows the hazards that may be faced during entry, including information on the mode, signs, or symptoms, and the consequences of the exposure;

6.1.2 Is aware of possible behavioral effects of hazard exposure in authorized entrants;

6.1.3 Continuously maintains an accurate count of authorized entrants in the permit space and ensures that the means used to identify authorized entrants accurately identifies who is in the permit space;

6.1.4 Remains outside the permit space during entry operations until entrant has exited the permit space;

NOTE: When HIS permit entry program allows attendant entry for rescue, attendants may enter a permit space to attempt a rescue if they have been trained and equipped for rescue operations and if they have been relieved by another attendant.

6.1.5 Communicates with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the space;

6.1.6 Monitors activities inside and outside the space to determine if it is safe for entrants to remain in the space and orders the authorized entrants to evacuate the permit space immediately under any of the following conditions:

6.1.6.1 If the attendant detects a prohibited condition;

6.1.6.2 If the attendant detects the behavioral effects of hazard exposure in an authorized entrant;

6.1.6.3 If the attendant detects a situation outside the space that could endanger the authorized entrants; or

6.1.6.4 If the attendant cannot effectively and safely perform all the duties;

6.2 Summons rescue and other emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from permit space hazards;

6.3 Takes the following actions when unauthorized persons approach or enter a permit space while entry is underway:

6.3.1 Warn the unauthorized persons that they must stay away from the permit space;

6.3.2 Advise the unauthorized persons that they must exit immediately if they have entered the permit space; and

6.3.3 Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the permit space;

6.4 Performs non-entry rescues as specified by the employer's rescue procedure;

6.5 Performs no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrants; and

6.6 OSHA requires at least one attendant for multiple entries, if the attendant has communication with all entrants.

7.0 DUTIES OF ENTRY SUPERVISORS

7.1 HIS shall ensure that each entry supervisor:

7.1.1 Knows the hazards that may be faced during entry, including information on the mode, signs, or symptoms, and the consequences of the exposure;

7.1.2 Verifies, by checking that the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin;

7.1.3 Terminates the entry and cancels the permit as required;

7.1.4 Verifies that rescue services are available and that the means for summoning them are operable;

7.1.5 Removes unauthorized individuals who enter or who attempt to enter the permit space during entry operations; and

7.1.6 Determines, whenever responsibility for a permit space entry operation is transferred and at intervals dictated by the hazards and operations performed within the space, that entry operations remain consistent with terms of the entry permit and that acceptable entry conditions are maintained

8.0 RESCUE AND EMERGENCY SERVICES PROVIDED BY HIS

8.1 The following requirements apply to HIS when their employees entering permit spaces to perform rescue services.

8.1.1 HIS shall ensure that each member of the rescue service is provided with, and is trained to use properly, the personal protective equipment and rescue equipment necessary for making rescues from permit spaces.

8.1.2 Each member of the rescue team shall be trained to perform the assigned rescue duties. Each member of the rescue service shall also receive the training required of authorized entrants.

8.1.3 Each member of the rescue team shall practice making permit space rescues at least once every 12 months, by means of simulated rescue operations in which they remove dummies, mannequins, or actual persons from the actual permit spaces or from representative permit spaces. Representative permit spaces shall, with respect to opening size, configuration, and accessibility, simulate the types of permit spaces from which rescue is to be performed.

8.1.4 Each member of the rescue team shall be trained in basic first aid and in cardiopulmonary resuscitation (CPR). At least one member of the rescue service holding current certification in first aid and in CPR shall be available.

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9.0 CONFINED SPACE TRAINING

9.1 Supervisor, entrants, attendants, and rescue team members will all be trained on an annual basis. The training will cover both the OSHA Confined Space Standard and HIS procedures. Verification of training will be kept in the personnel file of the employee.

SAFE WORK PERMIT

Permit #:_____ Tank/Vessel#:_____ Customer:_____
Job#:_____ Location:_____
Date:_____

VALID FOR ONE SHIFT ONLY (HOURS AND LENGTH OF SHIFT MAY VARY)

Purpose of Work:	Involving: Confined Space: ☐ Hot Work: ☐ Pipeline Breaking: ☐ Lockout/Tagout: ☐ Other: ☐	
EMERGENCY SERVICES:	ENTRY/WORK PERSONNEL:	SAFETY ATTENDANT/FIRE WATCH:
PHONE #: Do not use 911 because of cellular phone use in remote areas		ENTRY/WORK SUPERVISOR:

HAZARDS EXPECTED

- Flammable Materials: Flashpoint
- Corrosive Materials: pH:
- Reactive Materials: with
- Oxygen Deficiency/Enrichment:
- Pressured System: PSI
- High Temperature: EF
- Moving Machinery:
- Toxic Materials:
  - TLV/PEL _____ PPM
  - STEL _____ PPM
  - IDLH _____ PPM

PERSONAL PROTECTIVE EQUIPMENT - CHECK IF REQUIRED

- ☐ Hardhat
- ☐ Air Purifying Respirator
- ☐ Supplied Air Respirator
- ☐ Chemical Resistant Gloves
- ☐ Fire Retardant Clothing
- ☐ Safety Glasses
- ☐ Splash Goggles
- ☐ Face Shield
- ☐ Heat Resistant Gloves
- ☐ Leather Gloves
- ☐ Chemical Rubber Boots/Steel Toe
- ☐ Leather Work Foot Wear/Steel Toe
- ☐ Welding Equipment
- ☐ Chemical Resistant Clothing
  - ☐ Level A ☐ Level B
  - ☐ Level C ☐ Level D

ATMOSPHERIC TESTING: Periodic: ☐ Continuous: ☐

Time	Oxygen	LEL	Toxicity	Location	Performed by:

Test Equipment Used:

Calibration Date

Field Checked: ☐ Yes ☐ No

SPECIFIC REQUIREMENT CHECKLIST - SEE REVERSE SIDE FOR SPECIFICATIONS

CONFINED SPACE ENTRY

- ☐ Piping Blanked, Disconnected
- ☐ Mechanical Equipment Blocked
- ☐ Electrical Equipment Locked Out
- ☐ Ventilation Applied
- ☐ Protective Clothing
- ☐ Respiratory Protection
- ☐ Emergency Breathing Air
- ☐ Alarm or Emergency Horn
- ☐ Harness & Retrieval Line
- ☐ First Aid Kit
- ☐ Fire Extinguisher Available (2A, 40B, C)
- ☐ Atmosphere Tested
- ☐ Area Barricaded
- ☐ Emergency/Extra PPE and Equipment
- ☐ Communications System Used
  - ☐ Voice ☐ Radio
  - ☐ Rope ☐ Hand Signals
  - ☐ Tapping _____

HOT WORK

- ☐ Combustibles Relocated
- ☐ Area Barricaded
- ☐ Ventilation Applied (if needed)
- ☐ Fire Extinguisher (2A, 40B, C)
- ☐ Protective Eyewear
- ☐ Protective Clothing
- ☐ Respiratory Protection (if needed)
- ☐ Fire Watch (if required)
- ☐ Atmosphere Tested
- ☐ Drains Protective (if needed)

PIPELINE BREAKING

- ☐ Valves Closed, Locked & Tagged
- ☐ Electrical Equipment Locked Out
- ☐ Lines Blanked/Blinded
- ☐ Area Barricaded
- ☐ Lines Secured from Movement
- ☐ Safety Shower/Eyewash Located
- ☐ Safe Access to Lines
- ☐ Material Containment in Place
- ☐ Protective Clothing/Gloves
- ☐ Full Faceshield Worn
- ☐ Flange Covered
- ☐ Line Pressure Bled
- ☐ Line Purge/Decontaminated
- ☐ Lines Disconnected
- ☐ Contents Neutralized

LOCKOUT/TAGOUT

- ☐ Energy Source Deactivated
- ☐ Equipment Locked Out and Tagged
- ☐ Valves Closed & Locked and Tagged
- ☐ Lock Key Kept by Employee Doing Work
- ☐ If Using Department Lock, Key Box Locked by Hasp with Employee locks
- ☐ Tag Applied to Lock
- ☐ Mechanical Equipment Blocked
- ☐ Stored Energy Released
- ☐ Power Unit Tested

I have made all tests and inspections as required by the Company's safe work procedures, I have verified that all requirements are in place; and all hazards have been communicated to and understood by the employees upon issuing this safe work permit.
Time Issued:_____ Time Expires: _____
Authorizing Signature Date:

I have verified that all tests have been made and that the requirements are in place for me to do the work covered by this permit. *(EMPLOYEE SIGNATURES)*

The work covered by this permit is: ☐ Completed ☐ Not Completed
DATE:_____ TIME:_____
_____
Authorizing Supervisor

SAFE WORK PERMIT
Instructions and Specifications

PERMIT COMPLETION:
- To be completed by authorizing supervisor after conducting all safety inspection, atmospheric testing, and verifying that required precautions and equipment are in place.
- *Permit must be placed in the immediate area where the work is to be performed before work can begin.*

HAZARDS EXPECTED:
- Authorizing supervisor must identify hazardous materials or conditions that are anticipated with their flashpoints, pH, PEL and STEL, temperature, etc. as applicable. Also identify work hazards.

ATMOSPHERIC TESTING:
- Authorizing supervisor to determine if atmospheric testing shall be done periodically (every 30 minutes) or continuously. Testing results to be noted with type of equipment, calibration date, and if the instrument is field checked.
- Acceptable Atmospheric Test Results:
  1. Oxygen shall be not less than 19.5% nor greater than 23.5%.
  2. Combustibility shall not be greater than 10% of the LEL.
  3. Toxicity shall not exceed the PEL or STEL as applicable.
  4. Airborne combustible dust at a concentration less than its LEL (dust shall not obscure view at a distance of 5 feet).
- Entry under IDLH conditions is only allowed when appropriate management approvals have been received, supplied air respiratory equipment and appropriate personal protective equipment issued for atmospheres of less than 19.5% oxygen and/or toxicity greater than the PEL where such conditions cannot be controlled by ventilation alone.
- At no time should entry be allowed when the LEL is above 10%.

CONFINED SPACE ENTRY:
- Valve lockouts on piping are not permitted in place of possible blanking.
- Entryway must be posted "Entry by Permit Only".
- Electrical, mechanical, hydraulic, pneumatic equipment must be locked out and moving parts blocked.
- Safety attendant name must be identified on the SWP and MUST NOT leave his post at any time during entry.
- Emergency communications must be worked out before entry begins and method identified on Safe Work Permit.
- Fall Arrest/Retrieval lines must be attached to entrant while making vertical entry or exit.
- Only full-body harness with shoulder or upper back attachment point shall be used and worn by all entrants.
- A lifeline shall be attached to entrant and secured to a fixed point outside of the confined space.
- Fire extinguisher to be at least a 2A, 40B, C types.
- Mechanical Retrieval device shall be in place during all vertical entries of more than 5 feet.
- Ventilation shall be positive pressure type wherever possible and whenever atmospheric conditions are not originally acceptable and that such conditions may possibly change creating an unsafe atmosphere.
- Compressed gas cylinders for hot work must be located outside of the confined space.
- Emergency services provider must be identified on the Safe Work Permit with appropriate telephone number.
- All entry personnel must be identified on the Safe Work Permit and tracked during entry and exit.
- Emergency rescue equipment must be located immediately outside the confined space during entry.

HOT WORK:
- Combustibles must be relocated and the area barricaded for 35 feet from the area of hot work.
- Fire extinguisher must be at least 2A, 40B, C type.
- Fire retardant clothing, apron, or other PPE shall be worn by the work employee.
- Atmospheric testing must indicate an acceptable atmosphere and be recorded on the Safe Work Permit.
- Fire Watch shall be stationed where combustibles are not able to be moved beyond 35 feet and where hot work occurs near walls, or where other conditions may lead to materials being ignited outside of the 35 foot radius area. Fire watch to remain in place for 30 minutes after hot work is completed.
- Eyewear shall be appropriate for the work to be done including for 'welder's helpers".
- If combustible materials cannot be relocated, covers of shields shall be used to protect the materials.

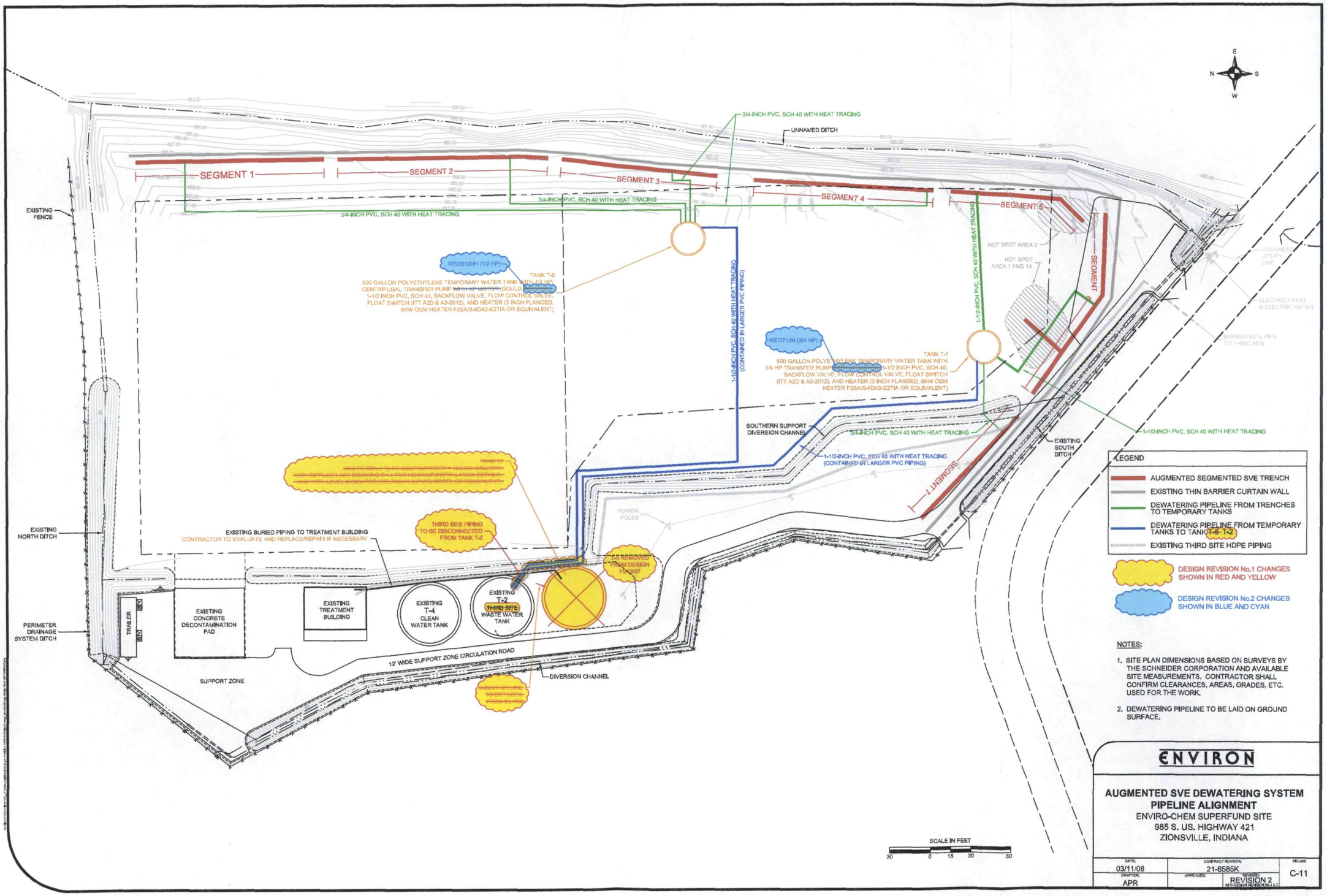
PIPELINE BREAKING:
- Valves upstream and downstream must be closed, locked, and tried. Where double block and bleed systems are used, bleed valves must be open.
- Safety Shower/Eyewash or other source of emergency water must be immediately available.
- Appropriate drip pan or absorbent shall be in place prior to breaking the line.
- Where the line/valve/flange is not open for depressurization or decontamination prior to breaking or cutting, a shield shall be placed over the area to be cut or broke. Additionally, employees shall wear goggles with full face shield and appropriate PPE.
- Pumps and other electrical equipment shall be locked out and tagged before work starts.

LOCKOUT/TAGOUT:
- Equipment is to be locked out and tagged at source(s) of power indicating owner, date, and reason for the lock.
- Key to personal lock must be kept by employee working on potentially energized equipment.
- Equipment to be tried by the authorizing supervisor to be assured that stored energy released prior to work.

SIGNATURES:
- Authorizing supervisor to sign verifying that safety equipment and procedures are in place, that tests have been done, and hazards communicated.
- Entrants/Work Personnel to sign verifying that tests were done and that all requirements are met.
- The authorizing supervisor signs at the expiration of the permit as to the status of the work.

Attachment D

Revisions to Drawings



NOTES:

1. SITE PLAN DIMENSIONS BASED ON SURVEYS BY THE SCHNEIDER CORPORATION AND AVAILABLE SITE MEASUREMENTS. CONTRACTOR SHALL CONFIRM CLEARANCES, AREAS, GRADES, ETC. USED FOR THE WORK.
2. DEWATERING PIPELINE TO BE LAID ON GROUND SURFACE.

ENVIRON

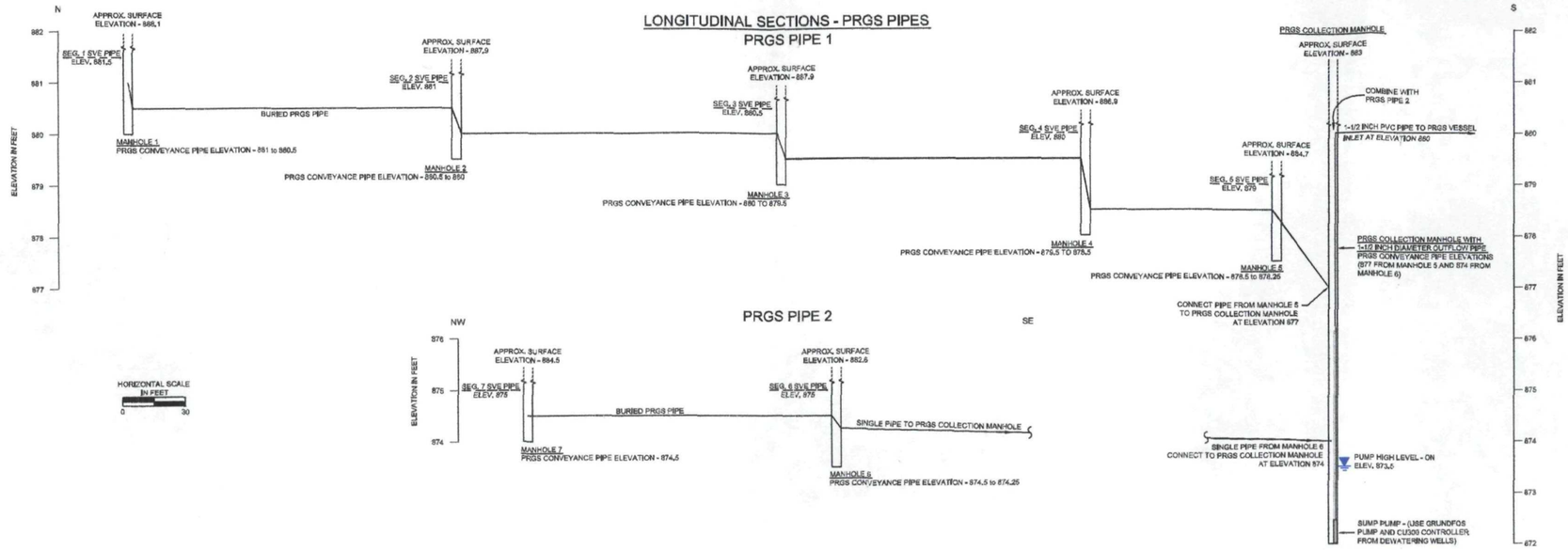
AUGMENTED SVE DEWATERING SYSTEM PIPELINE ALIGNMENT

ENVIRO-CHEM SUPERFUND SITE
985 S. US. HIGHWAY 421
ZIONSVILLE, INDIANA

DATE:	CONTRACT NUMBER:		FIGURE
03/11/08	21-6585K		C-11
DRAFTER: APR	APPROVED:	REVISED: REVISION 2 WITH DESIGN REVISIONS 1 & 2	

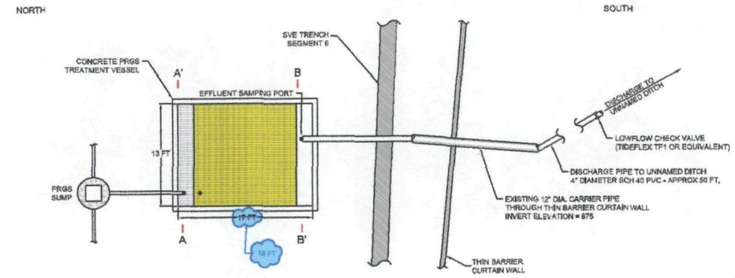
LONGITUDINAL SECTIONS - PRGS PIPES

PRGS PIPE 1

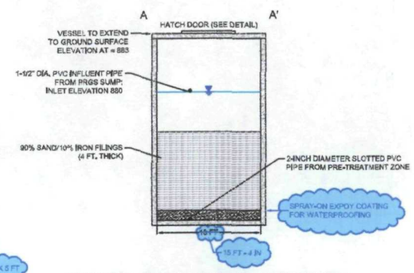


PRGS PIPE 2

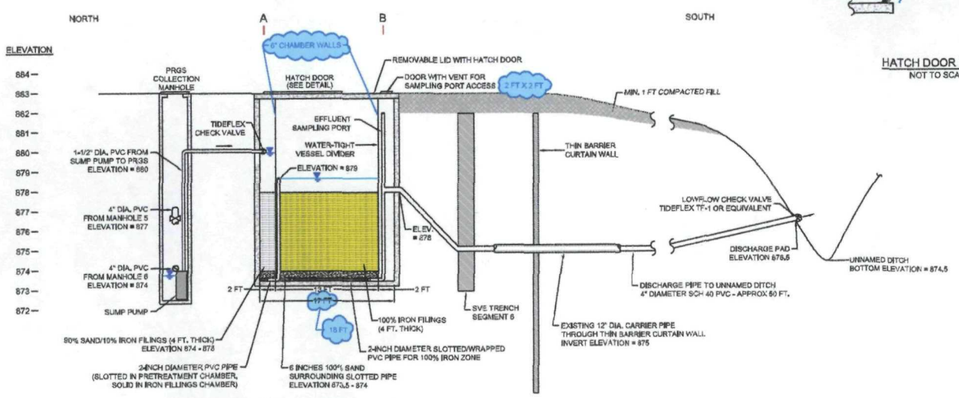
HORIZONTAL SCALE IN FEET
0 30



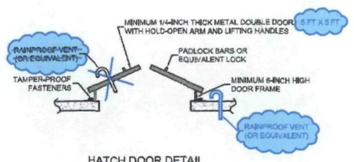
PERMEABLE REACTIVE GATE SYSTEM SCHEMATIC PLAN VIEW
NOT TO SCALE



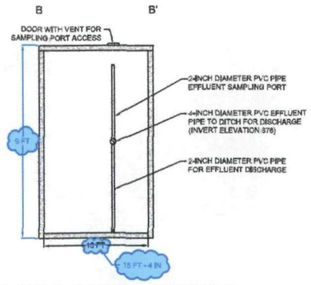
PERMEABLE REACTIVE GATE TREATMENT SYSTEM
SCHEMATIC CROSS-SECTION A-A'
NOT TO SCALE



PERMEABLE REACTIVE GATE SYSTEM SCHEMATIC CROSS-SECTION VIEW
NOT TO SCALE - SEE SPECIFICATION 2208



HATCH DOOR DETAIL
NOT TO SCALE



PERMEABLE REACTIVE GATE TREATMENT SYSTEM
SCHEMATIC CROSS-SECTION B-B'
NOT TO SCALE

PRGS VESSEL NOTES:

1. FABRICATE WITH THREE WATERTIGHT CHAMBERS - CONCRETE REINFORCEMENT TO BE DESIGNED BY CONTRATOR.
2. PLACE ON STABLE SOIL OR COMPACTED GRANULAR SUBSTANCE.
3. COAT EXTERIOR WITH WATERPROOFING SEAL/MASTIK.
4. HATCH DOOR SHALL BE LARGE ENOUGH TO ALLOW IRON FILING INSTALLATION/REMOVAL, SHALL PROVIDE PROTECTION FROM VANDALISM, AND MUST BE APPROVED BY THE ECC TRUST PRIOR TO PROCUREMENT.

PRGS COLLECTION MANHOLE NOTES:

1. COLLECTION MANHOLE SIZE/DEPTH TO BE DETERMINED BY CONTRACTOR - MINIMUM 2 FT DIAMETER; BOTTOM ELEVATION 872 OR DEEPER.
2. ADD WATERTIGHT SEAL AROUND PIPE PENETRATIONS.
3. ADD WATERPROOFING SEAL/MASTIK IF CONCRETE IS USED.
4. PUMP SHALL BE GRUNDFOS REDIFLO3 PUMP AND CU 300 CONTROLLER FROM DEWATERING WELLS.
5. SET HIGH WATER WELL PUMP SWITCH "ON" AT ELEVATION 873.5.

DESIGN REVISION No.2 CHANGES SHOWN IN BLUE AND CYAN

ENVIRON

PERMEABLE REACTIVE GATE SYSTEM SECTIONS AND PIPING
ENVIRO-CHEM SUPERFUND SITE
985 S. US. HIGHWAY 421
ZIONSVILLE, INDIANA

DATE:	CONTRACT NUMBER:	FIGURE
03/11/08	21-6585K	C-12
DRAFTER: APR	APPROVED:	REVISED: REVISION 2 WITH DESIGN REVISION #2

Attachment E

Laboratory Analytical Results

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

March 25, 2008

Mr. Kieran Hosey
HIS Constructors
5150 East 65th Street, Suite B
Indianapolis, IN 46220

RE: Project: ECC, Zionsville
Pace Project No.: 5013136

Dear Mr. Hosey:
Enclosed are the analytical results for sample(s) received by the laboratory on March 19, 2008. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Mick Mayse

Mick Mayse

mick.mayse@pacelabs.com
Project Manager

Illinois/NELAC Certification Number: 100418
Indiana Certification Number: C-49-06
Kansas Certification Number: E-10247
Kentucky Certification Number: 0042
Ohio VAP: CL0065
Pennsylvania: 68-00791
West Virginia Certification Number: 330

Enclosures

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

SAMPLE SUMMARY

Project: ECC, Zionsville
Pace Project No.: 5013136

Lab ID	Sample ID	Matrix	Date Collected	Date Received
5013136001	**Borrow Area**	Solid	03/19/08 11:23	03/19/08 13:39

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

SAMPLE ANALYTE COUNT

Project: ECC, Zionsville
Pace Project No.: 5013136

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
5013136001	**Borrow Area**	ASTM D2974-87	ILP	1	PASI-I
		EPA 6010	FRW	7	PASI-I
		EPA 7471	LLB	1	PASI-I
		EPA 8082	SAQ	8	PASI-I
		EPA 8260	JLF	17	PASI-I
		EPA 8270	KES	8	PASI-I
		EPA 9012	CLS	1	PASI-I

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Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

ANALYTICAL RESULTS

Project: ECC, Zionsville
Pace Project No.: 5013136

Sample: Borrow Area **Lab ID: 5013136001** Collected: 03/19/08 11:23 Received: 03/19/08 13:39 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3546							
PCB-1016 (Aroclor 1016)	ND	ug/kg	43.5	1	03/20/08 22:05	03/21/08 09:50	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	43.5	1	03/20/08 22:05	03/21/08 09:50	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	43.5	1	03/20/08 22:05	03/21/08 09:50	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	43.5	1	03/20/08 22:05	03/21/08 09:50	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	43.5	1	03/20/08 22:05	03/21/08 09:50	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	43.5	1	03/20/08 22:05	03/21/08 09:50	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	43.5	1	03/20/08 22:05	03/21/08 09:50	11096-82-5	
Tetrachloro-m-xylene (S)	49	%	20-130	1	03/20/08 22:05	03/21/08 09:50	877-09-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**7.9**	mg/kg	2.4	1	03/19/08 00:00	03/24/08 19:05	7440-38-2	
Barium	**65.0**	mg/kg	2.4	1	03/19/08 00:00	03/24/08 19:05	7440-39-3	
Cadmium	ND	mg/kg	2.4	1	03/19/08 00:00	03/24/08 19:05	7440-43-9	
Chromium	**15.5**	mg/kg	2.4	1	03/19/08 00:00	03/24/08 19:05	7440-47-3	
Lead	**9.3**	mg/kg	2.4	1	03/19/08 00:00	03/24/08 19:05	7439-92-1	
Selenium	ND	mg/kg	2.4	1	03/19/08 00:00	03/24/08 19:05	7782-49-2	
Silver	ND	mg/kg	2.4	1	03/19/08 00:00	03/24/08 19:05	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	ND	mg/kg	0.43	1	03/24/08 00:00	03/25/08 09:57	7439-97-6	
8270 MSSV SHORT LIST MICROWAVE	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
1,2-Dichlorobenzene	ND	ug/kg	410	1	03/20/08 22:35	03/24/08 16:00	95-50-1	
Phenol	ND	ug/kg	410	1	03/20/08 22:35	03/24/08 16:00	108-95-2	
Nitrobenzene-d5 (S)	60	%	26-115	1	03/20/08 22:35	03/24/08 16:00	4165-60-0	
2-Fluorobiphenyl (S)	61	%	38-110	1	03/20/08 22:35	03/24/08 16:00	321-60-8	
Terphenyl-d14 (S)	64	%	30-120	1	03/20/08 22:35	03/24/08 16:00	1718-51-0	
Phenol-d6 (S)	65	%	28-114	1	03/20/08 22:35	03/24/08 16:00	13127-88-3	
2-Fluorophenol (S)	61	%	30-107	1	03/20/08 22:35	03/24/08 16:00	367-12-4	
2,4,6-Tribromophenol (S)	53	%	25-118	1	03/20/08 22:35	03/24/08 16:00	118-79-6	
8260 MSV 5035A VOA	Analytical Method: EPA 8260							
Acetone	ND	ug/kg	123	1		03/21/08 16:11	67-64-1	
2-Butanone (MEK)	ND	ug/kg	30.8	1		03/21/08 16:11	78-93-3	
1,2-Dichloroethene (Total)	ND	ug/kg	6.2	1		03/21/08 16:11	540-59-0	
1,1-Dichloroethene	ND	ug/kg	6.2	1		03/21/08 16:11	75-35-4	
Ethylbenzene	ND	ug/kg	6.2	1		03/21/08 16:11	100-41-4	
Methylene chloride	ND	ug/kg	24.6	1		03/21/08 16:11	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	30.8	1		03/21/08 16:11	108-10-1	
Tetrachloroethene	ND	ug/kg	6.2	1		03/21/08 16:11	127-18-4	
Toluene	ND	ug/kg	6.2	1		03/21/08 16:11	108-88-3	
1,1,1-Trichloroethane	ND	ug/kg	6.2	1		03/21/08 16:11	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	6.2	1		03/21/08 16:11	79-00-5	
Trichloroethene	ND	ug/kg	6.2	1		03/21/08 16:11	79-01-6	

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ANALYTICAL RESULTS

Project: ECC, Zionsville
Pace Project No.: 5013136

Sample: Borrow Area **Lab ID: 5013136001** Collected: 03/19/08 11:23 Received: 03/19/08 13:39 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035A VOA	Analytical Method: EPA 8260							
Vinyl chloride	ND	ug/kg	6.2	1		03/21/08 16:11	75-01-4	
Xylene (Total)	ND	ug/kg	12.3	1		03/21/08 16:11	1330-20-7	
Dibromofluoromethane (S)	92	%	80-124	1		03/21/08 16:11	1868-53-7	
Toluene-d8 (S)	104	%	58-145	1		03/21/08 16:11	2037-26-5	
4-Bromofluorobenzene (S)	92	%	61-131	1		03/21/08 16:11	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**19.5**	%	0.10	1		03/20/08 15:26		
9012 Cyanide, Total	Analytical Method: EPA 9012 Preparation Method: EPA 9012							
Cyanide	ND	mg/kg	0.62	1	03/20/08 12:14	03/20/08 14:58	57-12-5	

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QUALITY CONTROL DATA

Project: ECC, Zionsville
Pace Project No.: 5013136

QC Batch: MPRP/2679
QC Batch Method: EPA 3050
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 5013136001

METHOD BLANK: 144471
Associated Lab Samples: 5013136001

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Arsenic	mg/kg	ND	2.0	
Barium	mg/kg	ND	2.0	
Cadmium	mg/kg	ND	2.0	
Chromium	mg/kg	ND	2.0	
Lead	mg/kg	ND	2.0	
Selenium	mg/kg	ND	2.0	
Silver	mg/kg	ND	2.0	

LABORATORY CONTROL SAMPLE: 144472

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	50	52.0	104	85-118	
Barium	mg/kg	50	51.8	104	84-118	
Cadmium	mg/kg	50	49.7	99	83-115	
Chromium	mg/kg	50	51.1	102	82-117	
Lead	mg/kg	50	49.8	100	83-116	
Selenium	mg/kg	50	48.9	98	82-116	
Silver	mg/kg	25	24.9	100	77-123	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 144759 144760

Parameter	Units	5013017012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	5.3	51.3	48.5	57.4	54.3	101	101	70-127	6	20	
Barium	mg/kg	8.8	51.3	48.5	55.2	52.8	90	91	60-140	4	20	
Cadmium	mg/kg	ND	51.3	48.5	41.9	40.6	81	83	65-120	3	20	
Chromium	mg/kg	5.1	51.3	48.5	50.7	48.9	89	90	60-130	4	20	
Lead	mg/kg	3.6	51.3	48.5	45.8	45.5	82	86	60-140	1	20	
Selenium	mg/kg	ND	51.3	48.5	47.1	45.8	91	93	60-130	3	20	
Silver	mg/kg	ND	25.7	24.2	24.5	23.8	95	98	70-130	3	20	

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QUALITY CONTROL DATA

Project: ECC, Zionsville
Pace Project No.: 5013136

QC Batch: WETA/2259
QC Batch Method: EPA 9012
Analysis Method: EPA 9012
Analysis Description: 9012 Cyanide
Associated Lab Samples: 5013136001

METHOD BLANK: 144826
Associated Lab Samples: 5013136001

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Cyanide	mg/kg	ND	0.50	

LABORATORY CONTROL SAMPLE: 144827

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/kg	10	10.8	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 144828 144829

Parameter	Units	5013136001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/kg	ND	12.4	12.4	13.4	13.8	107	110	75-125	3	20	

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QUALITY CONTROL DATA

Project: ECC, Zionsville
Pace Project No.: 5013136

QC Batch: PMST/2351
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 5013136001

SAMPLE DUPLICATE: 145024

Parameter	Units	5013079003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	8.1	5.8	33	5	R2

SAMPLE DUPLICATE: 145025

Parameter	Units	5013174002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	9.7	10.8	11	5	R2

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QUALITY CONTROL DATA

Project: ECC, Zionsville
Pace Project No.: 5013136

QC Batch: OEXT/6652
QC Batch Method: EPA 3546
Analysis Method: EPA 8082
Analysis Description: 8082 GCS PCB
Associated Lab Samples: 5013136001

METHOD BLANK: 145086
Associated Lab Samples: 5013136001

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	35.0	
PCB-1221 (Aroclor 1221)	ug/kg	ND	35.0	
PCB-1232 (Aroclor 1232)	ug/kg	ND	35.0	
PCB-1242 (Aroclor 1242)	ug/kg	ND	35.0	
PCB-1248 (Aroclor 1248)	ug/kg	ND	35.0	
PCB-1254 (Aroclor 1254)	ug/kg	ND	35.0	
PCB-1260 (Aroclor 1260)	ug/kg	ND	35.0	
Tetrachloro-m-xylene (S)	%	65	20-130	

LABORATORY CONTROL SAMPLE: 145087

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	126	76	46-129	
PCB-1260 (Aroclor 1260)	ug/kg	167	134	80	46-129	
Tetrachloro-m-xylene (S)	%			59	20-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 145088 145089

Parameter	Units	5013136001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	ND	208	208	105	135	51	65	50-150	24	20	R1
PCB-1260 (Aroclor 1260)	ug/kg	ND	208	208	112	142	54	69	50-150	24	20	R1
Tetrachloro-m-xylene (S)	%						40	54	20-130		20	R1

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QUALITY CONTROL DATA

Project: ECC, Zionsville
Pace Project No.: 5013136

QC Batch: OEXT/6653
QC Batch Method: EPA 3546
Analysis Method: EPA 8270
Analysis Description: 8270 Solid MSSV Microwave Short Spike
Associated Lab Samples: 5013136001

METHOD BLANK: 145090
Associated Lab Samples: 5013136001

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
1,2-Dichlorobenzene	ug/kg	ND	330	
Phenol	ug/kg	ND	330	
2,4,6-Tribromophenol (S)	%	66	25-118	
2-Fluorobiphenyl (S)	%	69	38-110	
2-Fluorophenol (S)	%	68	30-107	
Nitrobenzene-d5 (S)	%	66	26-115	
Phenol-d6 (S)	%	75	28-114	
Terphenyl-d14 (S)	%	88	30-120	

LABORATORY CONTROL SAMPLE: 145091

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenol	ug/kg	3330	2150	65	52-113	
2,4,6-Tribromophenol (S)	%			62	25-118	
2-Fluorobiphenyl (S)	%			65	38-110	
2-Fluorophenol (S)	%			63	30-107	
Nitrobenzene-d5 (S)	%			62	26-115	
Phenol-d6 (S)	%			70	28-114	
Terphenyl-d14 (S)	%			79	30-120	

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QUALITY CONTROL DATA

Project: ECC, Zionsville
Pace Project No.: 5013136

QC Batch: MERP/1575
QC Batch Method: EPA 7471
Analysis Method: EPA 7471
Analysis Description: 7471 Mercury
Associated Lab Samples: 5013136001

METHOD BLANK: 146193
Associated Lab Samples: 5013136001

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Mercury	mg/kg	ND	0.33	

LABORATORY CONTROL SAMPLE: 146194

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.5	0.48	95	85-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 146195 146196

Parameter	Units	5013230001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	ND	.48	.52	0.47	0.51	93	95	50-150	8	20	

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QUALITY CONTROL DATA

Project: ECC, Zionsville
Pace Project No.: 5013136

QC Batch: MSV/8147
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 5013136001

METHOD BLANK: 146244
Associated Lab Samples: 5013136001

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
1,1,1-Trichloroethane	ug/kg	ND	5.0	
1,1,2-Trichloroethane	ug/kg	ND	5.0	
1,1-Dichloroethene	ug/kg	ND	5.0	
1,2-Dichloroethene (Total)	ug/kg	ND	5.0	
2-Butanone (MEK)	ug/kg	ND	25.0	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	25.0	
Acetone	ug/kg	ND	100	
Ethylbenzene	ug/kg	ND	5.0	
Methylene chloride	ug/kg	ND	20.0	
Tetrachloroethene	ug/kg	ND	5.0	
Toluene	ug/kg	ND	5.0	
Trichloroethene	ug/kg	ND	5.0	
Vinyl chloride	ug/kg	ND	5.0	
Xylene (Total)	ug/kg	ND	10.0	
4-Bromofluorobenzene (S)	%	94	61-131	
Dibromofluoromethane (S)	%	102	80-124	
Toluene-d8 (S)	%	95	58-145	

LABORATORY CONTROL SAMPLE: 146245

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/kg	50	57.0	114	61-135	
1,1,2-Trichloroethane	ug/kg	50	57.1	114	74-127	
1,1-Dichloroethene	ug/kg	50	60.4	121	61-123	
1,2-Dichloroethene (Total)	ug/kg	100	116	116	70-130	
2-Butanone (MEK)	ug/kg	250	408	163	33-190	
4-Methyl-2-pentanone (MIBK)	ug/kg	250	266	106	58-126	
Acetone	ug/kg	250	677	271	30-190	L3
Ethylbenzene	ug/kg	50	57.6	115	78-121	
Methylene chloride	ug/kg	50	56.7	113	30-170	
Tetrachloroethene	ug/kg	50	48.8	98	63-117	
Toluene	ug/kg	50	61.2	122	72-123	
Trichloroethene	ug/kg	50	56.5	113	74-121	
Vinyl chloride	ug/kg	50	44.4	89	50-146	
Xylene (Total)	ug/kg	150	172	115	77-120	
4-Bromofluorobenzene (S)	%			100	61-131	
Dibromofluoromethane (S)	%			100	80-124	
Toluene-d8 (S)	%			99	58-145	

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QUALITY CONTROL DATA

Project: ECC, Zionsville
Pace Project No.: 5013136

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 146246 146247

Parameter	Units	5013033005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/kg	ND	43.7	44.5	39.6	34.4	91	77	27-142	14	20	
1,1,2-Trichloroethane	ug/kg	ND	43.7	44.5	39.8	26.3	91	59	20-155	41	20	
1,1-Dichloroethene	ug/kg	ND	43.7	44.5	45.0	37.2	103	84	23-132	19	20	
1,2-Dichloroethene (Total)	ug/kg	ND	87.4	89	79.5	60.9	91	68	50-150	27	20	
2-Butanone (MEK)	ug/kg	ND	219	222	306	221	140	99	30-190	32	20	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	219	222	251	153	115	69	30-144	48	20	
Acetone	ug/kg	ND	219	222	565	401	254	175	30-180	34	20	M0
Ethylbenzene	ug/kg	ND	43.7	44.5	27.9	21.0	64	47	50-150	28	20	
Methylene chloride	ug/kg	ND	43.7	44.5	38.9	26.2	89	59	30-163	39	20	1d
Tetrachloroethene	ug/kg	ND	43.7	44.5	27.2	19.7	62	44	40-155	32	20	
Toluene	ug/kg	ND	43.7	44.5	37.6	24.7	86	56	50-149	41	20	
Trichloroethene	ug/kg	ND	43.7	44.5	29.1	24.2	67	54	40-153	18	20	
Vinyl chloride	ug/kg	ND	43.7	44.5	38.5	32.8	88	74	36-137	16	20	
Xylene (Total)	ug/kg	ND	131	133	82.1	59.2	63	44	50-143	33	20	
4-Bromofluorobenzene (S)	%						81	96	61-131		20	
Dibromofluoromethane (S)	%						103	99	80-124		20	
Toluene-d8 (S)	%						119	103	58-145		20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 146248 146249

Parameter	Units	5013079003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/kg	ND	39.2	39.3	44.0	44.1	112	112	27-142	0	20	
1,1,2-Trichloroethane	ug/kg	ND	39.2	39.3	43.3	45.3	111	115	20-155	5	20	
1,1-Dichloroethene	ug/kg	ND	39.2	39.3	48.2	50.0	123	128	23-132	4	20	
1,2-Dichloroethene (Total)	ug/kg	ND	78.2	78.5	86.0	89.4	110	114	50-150	4	20	
2-Butanone (MEK)	ug/kg	ND	196	196	337	318	172	162	30-190	6	20	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	196	196	229	218	117	111	30-144	4	20	
Acetone	ug/kg	307	196	196	1200	926	454	315	30-180	25	20	M0,R1
Ethylbenzene	ug/kg	ND	39.2	39.3	41.2	41.8	103	105	50-150	1	20	
Methylene chloride	ug/kg	ND	39.2	39.3	37.5	38.6	96	98	30-163	3	20	
Tetrachloroethene	ug/kg	ND	39.2	39.3	34.6	36.1	88	92	40-155	4	20	
Toluene	ug/kg	ND	39.2	39.3	44.6	46.6	114	119	50-149	4	20	
Trichloroethene	ug/kg	ND	39.2	39.3	36.9	41.1	94	105	40-153	11	20	
Vinyl chloride	ug/kg	ND	39.2	39.3	38.2	38.7	98	99	36-137	1	20	
Xylene (Total)	ug/kg	ND	117	117	113	121	96	102	50-143	7	20	
4-Bromofluorobenzene (S)	%						89	92	61-131		20	
Dibromofluoromethane (S)	%						97	97	80-124		20	
Toluene-d8 (S)	%						111	106	58-145		20	

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QUALIFIERS

Project: ECC, Zionsville
Pace Project No.: 5013136

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

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LABORATORIES

PASI-I	Pace Analytical Services - Indianapolis

ANALYTE QUALIFIERS

1d	Multiple compounds are outside acceptance limits, refer to LCS for system conrtrol and data acceptability. JLF 3/24/08.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
M0	Matrix spike recovery was outside laboratory control limits.
R1	RPD value was outside control limits.
R2	RPD value was outside control limits due to matrix interference

Analytical Environmental Services, Inc.

Date: *25-Mar-08*

CLIENT:	Pace Analytical	**Client Sample ID:**	BORROW AREA
Lab Order:	0803B62	**Tag Number:**	
Project:	ECC, Zionsville	**Collection Date:**	3/19/2008 11:32:00 AM
Lab ID:	0803B62-001A	**Matrix:**	SOLID

Analyses	Result	Limit	Qual	Units	BatchID	DF	Date Analyzed
CHLORINATED PESTICIDES, TARGET COMPOUN		**SW8081A**		**(SW3550A)**			Analyst: **MM**
4,4'-DDD	BRL	4.2		µg/Kg-dry	97580	1	3/24/2008 12:21:00 PM
4,4'-DDE	BRL	4.2		µg/Kg-dry	97580	1	3/24/2008 12:21:00 PM
4,4'-DDT	BRL	4.2		µg/Kg-dry	97580	1	3/24/2008 12:21:00 PM
Aldrin	BRL	2.1		µg/Kg-dry	97580	1	3/24/2008 12:21:00 PM
alpha-BHC	BRL	2.1		µg/Kg-dry	97580	1	3/24/2008 12:21:00 PM
alpha-Chlordane	BRL	2.1		µg/Kg-dry	97580	1	3/24/2008 12:21:00 PM
beta-BHC	BRL	2.1		µg/Kg-dry	97580	1	3/24/2008 12:21:00 PM
delta-BHC	BRL	2.1		µg/Kg-dry	97580	1	3/24/2008 12:21:00 PM
Dieldrin	BRL	4.2		µg/Kg-dry	97580	1	3/24/2008 12:21:00 PM
Endosulfan I	BRL	2.1		µg/Kg-dry	97580	1	3/24/2008 12:21:00 PM
Endosulfan II	BRL	4.2		µg/Kg-dry	97580	1	3/24/2008 12:21:00 PM
Endosulfan sulfate	BRL	4.2		µg/Kg-dry	97580	1	3/24/2008 12:21:00 PM
Endrin	BRL	4.2		µg/Kg-dry	97580	1	3/24/2008 12:21:00 PM
Endrin aldehyde	BRL	4.2		µg/Kg-dry	97580	1	3/24/2008 12:21:00 PM
Endrin ketone	BRL	4.2		µg/Kg-dry	97580	1	3/24/2008 12:21:00 PM
gamma-BHC	BRL	4.2		µg/Kg-dry	97580	1	3/24/2008 12:21:00 PM
gamma-Chlordane	BRL	2.1		µg/Kg-dry	97580	1	3/24/2008 12:21:00 PM
Heptachlor	BRL	2.1		µg/Kg-dry	97580	1	3/24/2008 12:21:00 PM
Heptachlor epoxide	BRL	2.1		µg/Kg-dry	97580	1	3/24/2008 12:21:00 PM
Methoxychlor	BRL	21		µg/Kg-dry	97580	1	3/24/2008 12:21:00 PM
Toxaphene	BRL	210		µg/Kg-dry	97580	1	3/24/2008 12:21:00 PM
Surr: Decachlorobiphenyl	106	40.2-129		%REC	97580	1	3/24/2008 12:21:00 PM
Surr: Tetrachloro-m-xylene	100	41.2-112		%REC	97580	1	3/24/2008 12:21:00 PM
PERCENT MOISTURE		**D2216**					Analyst: **VRA**
Percent Moisture	20.7	0		wt%		1	3/24/2008 4:50:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	BRL	Below Reporting Limit	E	Estimated value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
	N	Analyte not NELAC certified	Rpt Lim	Reporting Limit
	S	Spike Recovery outside limits due to matrix		

Pace Analytical
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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

(B)
5013136

Page: 1 of 2

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	HIS Constructors, LLC	Report To:	Kieran T. Hosey	Attention:	Janell Phelps
Address:	5150 East 65th Street, Suite B	Copy To:	HIS Constructors, LLC	Company Name:	HIS Constructors, LLC
	Indidanapolis, IN 46220			Address:	
Email To:	kieran.hosey@hisconstructors.com	Purchase Order No.:	070047-006A	Pace Quote Reference:	
Phone:	317-509-3235 Fax: 317-541-9436	Project Name:	ECC, Zionsville	Pace Project Manager:	Mick Mayse
Requested Due Date/TAT:	ASAP	Project Number:		Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: IN

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information — SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N	Analysis Test	VOC Analysis	*SEE ATTACHED SHEET	SVOC Analysis	*SEE ATTACHED SHEET	PESTICIDES	PCB VIA 8082	METALS VIA 6010 & 7471	CYANIDE VIA 9010				Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	BORROW AREA		OT	G			03/19/08	1132		9												X		X		X	X	X	X				N	5013136001
2																																			
3																																			
4																																			
5																																			
6																																			
7																																			
8																																			
9																																			
10																																			
11																																			
12																																			

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
VOC ANALYSIS VIA 5035 METHOD	Kieran Hosey	3/19/08	1:39p	Lin Underspace	3/19/08	1:39p	1.1	T	W	Y
SEE ATTACHED SHEET FOR ANALYTES										

SAMPLER NAME AND SIGNATURE: Kieran Hosey Kieran Hosey

PRINT Name of SAMPLER: Kieran Hosey

SIGNATURE of SAMPLER: Kieran Hosey DATE Signed (MM/DD/YY): 03/19/08

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Yoke WF Client Lab

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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HES

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

501336

Page: 1 of 1

1186319

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company:	Report To:	Attention:
Address:	Copy To:	Company Name:
		Address:
Email To:	Purchase Order No.:	Pace Quote Reference:
Phone: Fax:	Project Name:	Pace Project Manager:
Requested Due Date/TAT:	Project Number:	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER

☐ UST ☐ RCRA ☐ OTHER _____

Site Location

STATE: _____

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information: SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	Matrix Codes: MATRIX / CODE — Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N	Analysis Test ↓	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1										1	X									X		
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: **DATE Signed (MM/DD/YY):**

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Sample Condition Upon Receipt

Pace Analytical

Client Name: His Const. Project # 5013136

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client ☐ Commercial ☐ Pace Other _____

Tracking #: _____ [redacted]

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☒ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other _____

Thermometer Used 6234 Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 1.1 °C Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: _____

Temp should be above freezing to 6°C Comments:

				Comments:
Chain of Custody Present:	☒Yes	☐No	☐N/A	1.
Chain of Custody Filled Out:	☒Yes	☐No	☐N/A	2.
Chain of Custody Relinquished:	☒Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☒Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☒Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72hr):	☒Yes	☐No	☐N/A	6. Reg 4pc TCs
Rush Turn Around Time Requested: ASAP	☒Yes	☐No	☐N/A	7.
Sufficient Volume:	☒Yes	☐No	☐N/A	8.
Correct Containers Used:	☒Yes	☐No	☐N/A	9.
-Pace Containers Used:	☒Yes	☐No	☐N/A	
Containers Intact:	☒Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☒N/A	11.
Sample Labels match COC:	☒Yes	☐No	☐N/A	12.
-Includes date/time/ID/Analysis Matrix: SOIL				
All containers needing preservation have been checked.	☐Yes	☐No	☒N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes	☐No	☒N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes	☐No		Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes	☐No	☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☒N/A	15.
Trip Blank Present:	☐Yes	☐No	☒N/A	16.
Trip Blank Custody Seals Present	☐Yes	☐No	☒N/A	
Pace Trip Blank Lot # (if purchased): _____				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Kiernan H. Date/Time: 3/19/08 @ 3:30

Comments/ Resolution:

Run RCRA 8 metals, Rush TAT = Tues 3/25

Project Manager Review: M Mayer **Date:** 3/20/08

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

PROPOSED BORROW SOIL ANALYTICAL RESULTS
ENVIRO-CHEM SUPERFUND SITE
ZIONSVILLE, INDIANA

	Borrow Soil			
Collection Date:	3/19/2008			
Matrix:	Solid			
	Results	**Units**	**RL**	**Units**
Volatile Organic Compounds				
Acetone	ND	µg/kg	123	µg/kg
2-Butanone	ND	µg/kg	30.8	µg/kg
1,1-Dichloroethene	ND	µg/kg	6.2	µg/kg
1,2-Dichloroethene (total)	ND	µg/kg	6.2	µg/kg
Ethylbenzene	ND	µg/kg	6.2	µg/kg
Methylene chloride	ND	µg/kg	24.6	µg/kg
4-Methyl-2-pentanone	ND	µg/kg	30.8	µg/kg
Tetrachloroethene	ND	µg/kg	6.2	µg/kg
Toluene	ND	µg/kg	6.2	µg/kg
1,1,1-Trichloroethane	ND	µg/kg	6.2	µg/kg
1,1,2-Trichloroethane	ND	µg/kg	6.2	µg/kg
Trichloroethene	ND	µg/kg	6.2	µg/kg
Vinyl chloride	ND	µg/kg	6.2	µg/kg
Xylene (total)	ND	µg/kg	12.3	µg/kg
Semi-volatile Organic Compounds				
1,2-Dichlorobenzene	ND	µg/kg	410	µg/kg
Phenol	ND	µg/kg	410	µg/kg
Pesticides				
Aldrin	ND	µg/kg	2.1	µg/kg
alpha-BHC	ND	µg/kg	2.1	µg/kg
beta-BHC	ND	µg/kg	2.1	µg/kg
delta-BHC	ND	µg/kg	2.1	µg/kg
gamma-BHC (Lindane)	ND	µg/kg	4.2	µg/kg
alpha-Chlordane	ND	µg/kg	2.1	µg/kg
gamma-Chlordane	ND	µg/kg	2.1	µg/kg
4,4'-DDD	ND	µg/kg	4.2	µg/kg
4,4'-DDE	ND	µg/kg	4.2	µg/kg
4,4'-DDT	ND	µg/kg	4.2	µg/kg
Dieldrin	ND	µg/kg	4.2	µg/kg
Endosulfan I	ND	µg/kg	2.1	µg/kg
Endosulfan II	ND	µg/kg	4.2	µg/kg
Endosulfan sulfate	ND	µg/kg	4.2	µg/kg
Endrin	ND	µg/kg	4.2	µg/kg
Endrin aldehyde	ND	µg/kg	4.2	µg/kg
Endrin ketone	ND	µg/kg	4.2	µg/kg
Heptachlor	ND	µg/kg	2.1	µg/kg
Heptachlor epoxide	ND	µg/kg	2.1	µg/kg
Methoxychlor	ND	µg/kg	21	µg/kg
Toxaphene	ND	µg/kg	210	µg/kg

PROPOSED BORROW SOIL ANALYTICAL RESULTS
ENVIRO-CHEM SUPERFUND SITE
ZIONSVILLE, INDIANA

	Borrow Soil			
Collection Date:	3/19/2008			
Matrix:	Solid			
	Results	**Units**	**RL**	**Units**
Polychlorinated Biphenyls				
Aroclor-1016	ND	µg/kg	43.5	µg/kg
Aroclor-1221	ND	µg/kg	43.5	µg/kg
Aroclor-1232	ND	µg/kg	43.5	µg/kg
Aroclor-1242	ND	µg/kg	43.5	µg/kg
Aroclor-1248	ND	µg/kg	43.5	µg/kg
Aroclor-1254	ND	µg/kg	43.5	µg/kg
Aroclor-1260	ND	µg/kg	43.5	µg/kg
Inorganic Analytes				
Arsenic	7.9	mg/kg	2.4	mg/kg
Barium	65.0	mg/kg	2.4	mg/kg
Cadmium	ND	mg/kg	2.4	mg/kg
Chromium (total)	15.5	mg/kg	2.4	mg/kg
Lead	9.3	mg/kg	2.4	mg/kg
Selenium	ND	mg/kg	2.4	mg/kg
Silver	ND	mg/kg	2.4	mg/kg
Mercury	ND	mg/kg	0.43	mg/kg
Cyanide	ND	mg/kg	0.62	mg/kg

Key:

RL = Reporting limit
ND = Not detected
µg/kg = Micrograms per kilogram
mg/kg = Milligrams per kilogram